

REPLACING THERMOSTAT

MODELS: 80VP, 125VP, 170VP



WARNING

LP & NG ARE EXTREMELY FLAMMABLE SO TAKE EXTRA PRECAUTIONS WHEN PERFORMING ANY WORK TO THE HEATER

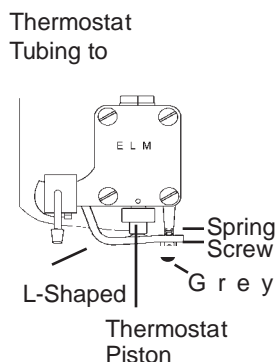
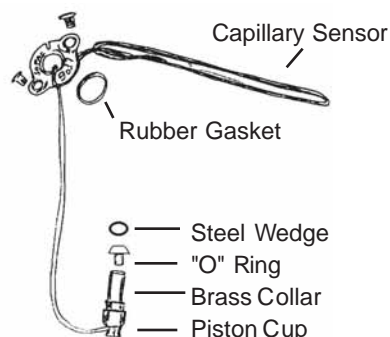
Removing Thermostat:

Your replacement thermostat comes as part of a kit. The kit includes additional replacement components to ensure a successful installation. When removing the old thermostat be certain to remove all its components ("O" Ring, and Steel Wedge) prior to installing the replacement thermostat.

1. Shut off gas to the heater by turning the handle on the main gas valve.
2. Shut off the water supply to the heater and open a faucet on the lowest floor to drain the line and relieve the pressure.
3. Remove the front panel, the left panel, and the bottom tray.
4. Remove the L-Shaped Lever, spring and screw (see fig.A). Screw is covered with a grey cap on newer models. Back out the screw all the way, being careful not to lose the spring, and then remove the L-lever. (Set these three parts aside as a unit, ready to reinstall).
5. Pull down on the thermostat piston assembly to remove it from the gas valve.

NOTE: There is a Steel Wedge and an "O" Ring which should come out with the piston assembly. If they do not, reach up with tweezers and/or a magnet for the Steel Wedge and remove them. Be especially careful not to push the Steel Wedge into the valve housing.

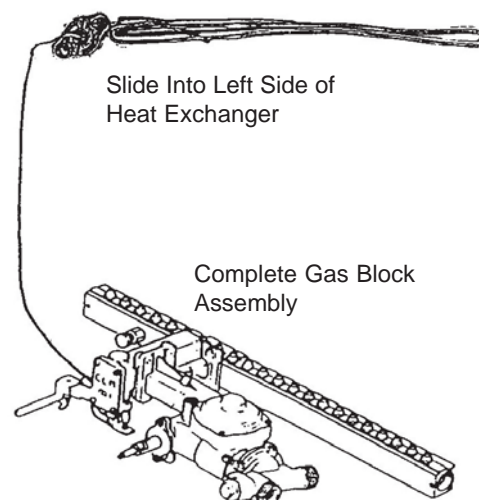
6. Remove the two screws at the other end of the thermostat (located on the upper left side of the heat exchanger) and slide the capillary sensor out of the heat exchanger. Note: You should have a basin ready to collect the water that will then be released from the heat exchanger.



Installing new thermostat:

When working with the thermostat, be careful not to damage it: The copper capillary tube is hollow and can be damaged if crimped or bent too sharply.

1. Insert the capillary sensor into the heat exchanger. Be sure that the rubber gasket seats properly and then retighten the two screws.
2. Slide the new Brass Collar over the piston.
3. Slide the "O" Ring over the piston so that it seats above the Brass Collar.
4. Place the Steel Wedge into the piston cup. Position it so it is oriented with a flat side facing you. A dab of grease or silicone will help it stay in place.
5. Slide the assembly up into the valve housing, ensuring that the Steel Wedge does not shift to an angled position.
6. Reinstall the L-Shaped Lever, spring and screw. Be sure the left side of the L-lever is positioned over the cam. Tighten the screw in all the way so the spring is compressed. Now calibrate the thermostat.
7. To calibrate the thermostat properly, continue with the calibration and thermostat test on the following page.



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To calibrate thermostat:

(See diagram for correct location of screw to recalibrate)

1. Turn calibration screw in clockwise all the way, compressing the spring.
2. Back out screw 1 1/2 full turns. When set at the factory, the space from top to bottom portion of the spring should be approximately 5/32" or 4mm.

Note: Turning the screw in (up) reduces the burner flames. Unscrewing it increases the flames. If a thermostat is in good condition, and the calibration screw is properly adjusted, the water temperature should be 145° (± 5) when temperature dial setting is set at #8 and water is flowing at the minimum burner activating flow of 3/4 of a gallon a minute (Model 80/125 VP) or 1.1 gpm (Model 170).

Note: Sometimes as a thermostat gets old (5 yrs or so), the space on the screw adjustment may be too loose. In that case, turn the screw in another half or full turn more if need be. It is important that you do not back this screw out so far that the burner flames do not modulate and burners are always on full. Without modulation, the heater will overheat and shut down.

Test procedure to confirm thermostat is working properly

1. Turn AquaStar temperature setting to #8. This is all the way to the right, clockwise.
2. Turn on a hot water tap at the flow which will turn the AquaStar burners on. If the heater is working correctly, this minimum activation flow will be 3/4 of a gallon a minute, for Model 125/80 and 1.1 for Model 170. This is a flow that can fill up a quart jar in 20 sec for the Model 125/80 and 15 sec for the Model 170. If the necessary flow to activate burners needs to be higher than the required minimum, see water valve trouble shooting in your manual. The burners will come on at maximum fire and, within a minute or so the burner flames will stabilize to a lower flame. Water temperature should be around 145° ± 5. (This is scalding and too hot to put your

- hand under.) You should not be able to hold on to the hot water pipe on the left side of the AquaStar.
3. Next turn the temperature dial all the way to the left to the lowest setting #2. Burner flames will become quite small and should remain small. Water temperature, after a minute or so, should stabilize at about 105° ± 5. Holding the hot water pipe should be comfortable.
 4. Leaving temperature setting at #2, now, increase water flow on higher. You should see the burner flames increase in size, and then decrease when you reduce the water flow.
 5. **Note:** If all of the above performs according to this description, the thermostat is working correctly.

Note: Unless setting #8 (145° ± 5, this is scalding hot water) is needed for some rare occasion we highly recommend running the heater on setting 4 or 5. This will also avoid the need to mix a lot of cold water.

